Public Testimony by Bradford Taylor to the Forest Grove Planning Commission about the Westside Refinement Plan, 5/30/2017

We recognize that the David Hill area will be developed eventually and we appreciate the City's efforts to have a carefully considered plan for the area in place before there is significant pressure from developers which might lead to ill-considered decisions.

Given the significantly above-average infrastructure costs projected for the area, with attendant problems in figuring out how to fund that infrastructure, we'd like to offer an idea which can save the City literally millions of dollars. We would hope that savings would be passed along to home-builders in the area, including, admittedly, ourselves, in the form of more moderate SDC's. In addition to being thus in keeping with the City's avowed interest in economic sustainability, this idea also supports environmental sustainability.

The projected cost of the sewer system for the area is second only to the cost of roads. What we are proposing is that the City use an effluent sewer system in the David Hill area instead of the traditional large diameter gravity sewer system.

For those unfamiliar with the concept, Septic Tank Effluent Pump (STEP) or Septic Tank Effluent Gravity (STEG) systems involve each house having a septic tank, paid for by the homeowner during construction, but then operated and maintained by the City, with necessary easements for access. Because the septic tanks retain solids, the effluent from the tanks is liquid, which can flow by gravity or be pumped if necessary into small collection lines which then connect to an existing standard sewer line.

This system offers several benefits:

—The liquid effluent can be transported in 4" or 6" pipes, which need only be buried four feet underground and can follow the contours of the land, rather than 8" or greater pipes which must be laid on a steady incline, necessitating extensive excavation. This is particularly significant in the David Hill area because it would obviate the need for a 15' high, 800' long fill across a Council Creek tributary to raise Thatcher Road to accommodate a gravity sewer line. This would reduce the roadway component of the proposed new infrastructure, as well as the cost of sewer construction by millions of dollars.

—The small diameter pipes need cleanouts every 300', which are very much cheaper than manholes and which almost eliminate the infiltration and inflow of water and debris into the sewer system. This lowers the capacity requirements for the treatment facilities, as unwanted inflow is a significant portion of the sewer burden.

—The individual septic tanks also lessen the burden on the treatment plant by smoothing the flow throughout the day, reducing the big morning and evening influx. They also passively, anaerobically decompose the solids they retain, so, even though those are pumped out every seven to ten years and taken to the treatment plant, they are already much reduced.

—While gravity sewer systems make sense in heavily concentrated developments, effluent systems are ideally suited for lower density developments and hilly terrain, which we have in the David Hill area.

—A study of the 24 years that Lacey, Washington has been using a STEP system in conjunction with a gravity system has shown that, while the initial operations and maintenance costs of the STEP system were higher than the O&M costs of the gravity system, when the city was refining its operation plan, the costs are now virtually the same. With the much less expensive construction, repair and replacement costs

of the STEP system, and its lesser environmental impact, the life cycle costs of the STEP system are substantially lower than a gravity system.

While this is a relatively new type of sewer system, it now has decades of data from cities across the country to demonstrate its cost effectiveness and value. We all tend to stick with the thing we know, and there is a natural resistance to having to learn about and implement a new idea. We have been told that Clean Water Services would have the final say on permitting the sewer system for the Westside area. A few years ago, when we were exploring options for meeting the sewer system needs of Green Grove Cohousing, CWS was not at all interested in anything other than a standard sewer system. We were proposing one small development, with a handful of houses and CWS didn't need to pay us much attention. Forest Grove was very good about working with us to come up with an alternative. But the David Hill area is projected to have 776 houses, with a sewer system costing $3.6 million. That sewer system cost could be reduced by as much as 60% (saving $2.16 million) and the road system financial and environmental cost reduced by the elimination of the Thatcher Road fill, which is projected to cost $1,454,000. That is as much as $3.6 million dollars saved.

Forest Grove has a much bigger voice than Green Grove. We believe this idea can have considerable impact, financially, environmentally and as a model for future sustainable development. We hope it can generate excitement among those who are planning Forest Grove's future. Given the long-range nature of the Westside planning process, we think there is an opportunity for the City to negotiate with Clean Water Services and champion the idea of an effluent sewer system for the David Hill development area.

Please see the following, which can be found on the web, for more detailed information about STEP/STEG sewer systems:

–20 Year Life Cycle Analysis of an Effluent Sewer (STEP) System, City of Lacey, Washington by Bill Cagle, Terry Cargil, Roger Dickinson

–DECENTRALIZED DESIGN CONSIDERATIONS AND LIFE-CYCLE COSTS by Terry R. Bounds, P.E. and Grant Denn